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# (54) Process for production of peptidylglycine alpha-hydroxylating monooxygenase and use thereof.

(57) A process for the production of peptidylglycine α-amidating monooxygenase, comprising the steps of:
culturing insect cells transfected with a recombinant baculovirus to which a DNA coding for the peptidylglycine α-amidating monooxygenase has been incorporated to produce the enzyme, and recovering the enzyme from the culture; and a process for the production of a C-terminal α-amidating peptide, comprising converting a C-terminal glycine-extended peptide to a C-terminal α-amidating peptide using the enzyme prepared by the above process.

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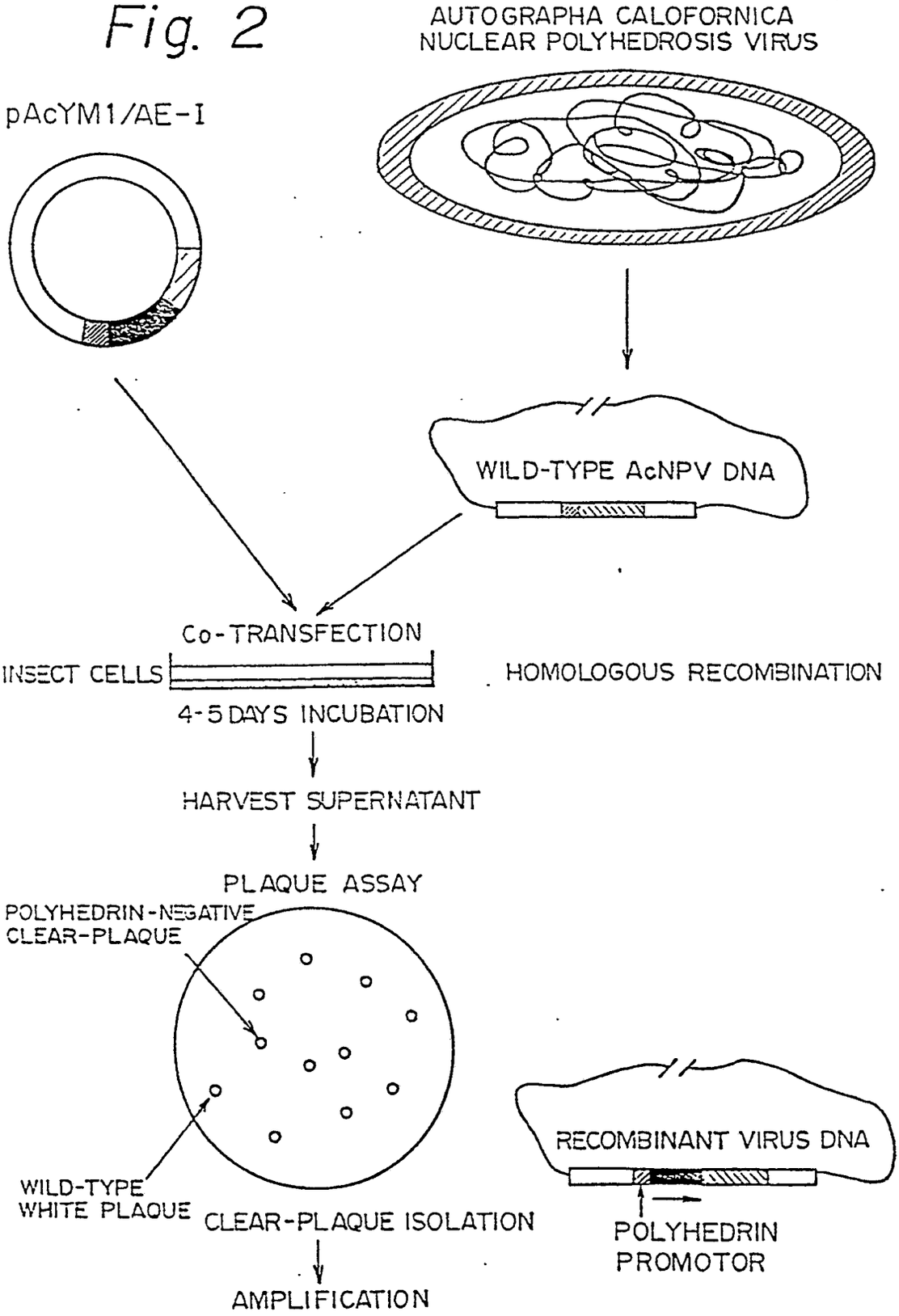
Fig. 2


AUTOGRAPHA CALOFORNICA
NUCLEAR POLYHEDROSIS VIRUS
pAcYM1/AE-I
WILD-TYPE AcNPV DNA
Co-TRANSFECTION
INSECT CELLS
HOMOLOGOUS RECOMBINATION
4-5 DAYS INCUBATION
HARVEST SUPERNATANT
PLAQUE ASSAY
POLYHEDRIN-NEGATIVE
CLEAR-PLAQUE
WILD-TYPE
WHITE PLAQUE
CLEAR-PLAQUE ISOLATION
AMPLIFICATION
RECOMBINANT VIRUS DNA
POLYHEDRIN
PROMOTOR

European Patent Office

# EUROPEAN SEARCH REPORT

Application number
EP 91810163



## DOCUMENTS CONSIDERED TO BE RELEVANT

| Category | Citation of document with indication, where appropriate, of relevant passages | Relevant to claim | CLASSIFICATION OF THE APPLICATION (Int. Cl.5) |
|---|---|---|---|
| D,Y<br>D,A | EP-A-299790 (SUNTORY LIMITED)<br>* abstract; claims 1-31 * | 1,5<br>4 | C12N15/53<br>C12N9/02<br>C07K15/00 |
| Y | WO-A-8905850 (THE UNITED STATES OF AMERICA)<br>* page 2, lines 8-24; claims 1-3 * | 1,5<br>2,3 | C07K1/00 |
| D,A | BIOCHEMICAL AND BIOSPHYICAL RESEARCH COMMUNICATIONS<br>vol. 150, no. 3, 15 February 1988, pages 1275-1281, New York, US; K. OHSUYE et al.: "Cloning of cDNA encoding a new peptide C-terminal alpha-amidating enzyme having a putative membrane-spanning domain from Xenopus laevis skin"<br>* the whole document * | 1,5,8 | |
| A | WO-A-8602099 (UNIGENE LABORATORIES, INC.)<br>* page 1, line 1 - page 2, line 7 * | 1-3,5,<br>8,9 | |
| A | WO-A-8902460 (GENENTECH.INC.)<br>* the whole document * | 1-3,5,<br>8 | TECHNICAL FIELDS SEARCHED (Int. Cl.5)<br>C12N15<br>C12N9<br>C07K15<br>C07K1 |
| A | GB-A-2092157 (KABUSHIKI KAISHA HAYSHIBARA SEIBUTSU KAGAKU KENKYUJO)<br>* the whole document * | 6,7,11,<br>12 | |
| A | EP-A-121764 (F. HOFFMAN-LAROCHE & CO.)<br>* abstract * | 5,6,8,9 | |
| A | EP-A-83864 (BECKMAN INSTRUMENTS, INC.)<br>* abstract * | 5,6,8,9 | |
| A | EP-A-188400 (CIBA-GEIGY AG)<br>* page 31, lines 24-29; claims 1-15 * | 5,6,8,9 | |
| A | WO-A-9002187 (APPLIED RESEARCH SYSTEMS ARS HOLDING N.V.)<br>* abstract * | 6 | |

The present search report has been drawn up for all claims 1-12

| Place of search | Date of completion of the search | Examiner |
|---|---|---|
| BERLIN | 30.05.1991 | GURDJIAN, D. |

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
Y : particularly relevant if combined with another document of the same category
A : technological background
O : non-written disclosure
P : intermediate document

T : theory or principle underlying the invention
E : earlier patent document but published on, or after the filing date
D : document cited in the application
L : document cited for other reasons

& : member of the same patent family, corresponding document

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## CLAIMS INCURRING FEES

The present European patent application comprised at the time of filing more than ten claims.

☐ All claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for all claims.

☐ Only part of the claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims and for those claims for which claims fees have been paid.

namely claims:

☐ No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims.

## X LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirement of unity of invention and relates to several inventions or groups of inventions.

namely:

1. claims: 1-12 process for the production of peptidylglycine alpha-hydroxylating monooxygenase, process for the production of peptidylglycine peptide and amidated peptide with this enzyme

2. claim: 13 method for assaying peptidylglycine alpha-hydroxylating monooxygenase

☐ All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.

☐ Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid.

namely claims:

☒ None of the further search fees has been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims.

1-12

namely claims:

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## DOCUMENTS CONSIDERED TO BE RELEVANT

| Category | Citation of document with indication, where appropriate, of relevant passages | Relevant to claim |
|---|---|---|
| P,X | EMBO JOURNAL<br>vol. 9, no. 13, December 1990, pages 4259-4265, Eynsham, Oxford, GB; K. SUZUKI et al.: "Elucidation of amidating reaction mechanism by frog amidating enzyme, peptidylglycine alpha-hydroxylating monooxygenase, expressed in insect cell culture"<br>* the whole document * | 1-12 |

CLASSIFICATION OF THE APPLICATION (Int. Cl.5)

TECHNICAL FIELDS SEARCHED (Int. Cl.5)

EPO Form 1503.2 06.78